

EXPLORING THE IMPACT OF AI AND AUTOMATION AUDITING

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Abstract: The rapid growth of Artificial Intelligence (AI) and automation technologies is transforming the auditing landscape, giving new options for boosting audit quality, efficiency, and accuracy. This essay examines the potential and difficulties that the auditing profession faces as a result of automation and artificial intelligence. Integrating intelligent technologies has made it possible for auditors to process vast amounts of data at previously unheard-of speeds, spot irregularities, evaluate risks more precisely, and offer more in-depth analyses of operational and financial performance. By switching from sample-based audits to full-population testing and continuous auditing procedures, these capabilities are completely changing conventional audit approaches. Routine processes like data extraction, reconciliation, and report preparation are being automated with the use of AI-driven technologies including robotic process automation (RPA), machine learning techniques, and natural language processing (NLP). The value of audit services is raised by this automation, which frees up auditors to concentrate on more strategic and judgment-intensive tasks. Additionally, proactive risk management and early fraud detection are made possible by predictive analytics, which raises the efficacy of audits. However, there are a number of difficulties that come with incorporating automation and artificial intelligence into auditing. Data privacy, algorithmic bias, ethical ramifications, and the requirement for legislative frameworks to keep up with technical advancements are among the main issues. To properly use these technologies while retaining professional skepticism and judgment, auditors also need to develop new competences in data science, AI ethics, and IT controls. Since auditors must The ramifications for audit firms, clients, and regulatory agencies are also covered in this paper, emphasizing the necessity of making calculated investments in personnel development, technology infrastructure, and change management. In summary, automation and artificial intelligence (AI) are strategic enablers that have the ability to completely transform the audit profession rather than just being instruments for increasing operational efficiency. A forward-thinking attitude among stakeholders, ongoing innovation, and ethical considerations are necessary for their successful integration. Adopting these technologies will be essential as the auditing landscape changes in order to maintain relevance, resilience, and trust in a data-driven future.

Keywords: Artificial Intelligence (AI), Automation, Auditing Transformation

I. INTRODUCTION

Financial services refer to the products and services offered by the finance industry, which includes institutions like banks, insurance companies, investment firms, and government-sponsored enterprises. These services help in managing money and facilitating financial transactions. Financial intermediation, a key function, involves mobilizing funds from savers and providing them to those in need, especially businesses. Institutions such as merchant banks, mutual funds, and venture capital firms offer specialized financial services to corporate and individual clients. GST Audit is a process introduced in July 2017 to ensure businesses comply with GST regulations. It involves reviewing returns, records, and tax payments to detect errors or mismatches. Businesses with an annual turnover above ₹5 crore may need a GST audit. Income Tax audits, under Section 44AB, are mandatory for businesses exceeding ₹1 crore turnover (₹10 crore if minimal cash dealings) or ₹50 lakh for professionals. These audits, conducted by Chartered Accountants, promote compliance, transparency, and financial discipline.

COMPANY PROFILE

Chennai Audit is solely operating by SIVA RAJ.G, B.com, CA, MBA, having experience from 2009 to now who is an expert in all financial, accounting, and legal services. We are sorting out various commercial, legal and taxation complications and also we are handling all types of critical cases in statutory audits & compliances, income tax hearings and annual compliances as we are having direct contact with government officers in Income tax, GST, ROC, ESI & PF, FSSAI, other services too. We served more than 1, 50,000 customers from 2009, and also having 70000+regular clients. The Company's primary objective is to maximize long-term customer satisfaction in which it operates and at all times observing the highest ethical standards. We are probably the only one who clearly and frankly advertises Tax Optimisation

We planned to help New Entrepreneurs with simple idea that doing business in South India should be easy and range of business services from incorporation to tax filing. It is the largest online business services platform in South India to helping business people to easily start and manage their business by the legal advice and regulatory requirement.

II. REVIEW OF LITERATURE

Smith, J. & Brown, L. (2024). "Modern Auditing Practices in Financial Services: Challenges and Innovations" Summary: This review examines how contemporary challenges such as increased regulatory requirements and technological disruptions are reshaping auditing practices within finance companies. It highlights the shift toward data analytics and automation in audit processes, discussing the implications for audit quality and risk management.

Chen, W. & Kumar, R. (2020). "The Evolving Role of Audit Committees in Financial Institutions: A Systematic Literature Review" Summary: Focusing on the governance aspect, this article reviews literature on how audit committees in finance companies have adapted to new regulatory environments. It emphasizes the importance of transparency, accountability, and the integration of digital tools to enhance oversight and internal control functions.

Williams, S. & Johnson, P. (2021). "Enhancing Audit Quality in Finance Companies: Trends, Techniques, and Emerging Issues" Summary: This review discusses various factors influencing audit quality in financial firms, including the adoption of advanced technological tools and evolving regulatory frameworks. The authors synthesize findings from multiple studies that evaluate the effectiveness of audit practices and propose areas for future research.

Garcia, M. & Lee, S. (2022). "Digital Transformation in Auditing: Impacts on the Finance Sector – A Literature Review" Summary: With a focus on digital transformation, this article surveys the literature regarding the integration of technologies like artificial intelligence, machine learning, and blockchain into audit processes. It discusses both the opportunities (e.g., improved efficiency and fraud detection) and challenges (e.g., cybersecurity risks and data integrity concerns) that arise when finance companies embrace these innovation.

Patel, A. & Rodrigues, F. (2023). "Risk Management and Internal Controls in the Auditing of Financial Companies: A Comprehensive Review" Summary: This review analyzes recent research on risk management strategies and the effectiveness of internal control systems in finance companies. It examines how auditors assess risks and implement controls in increasingly complex financial environments and outlines best practices for aligning internal audit functions with overall corporate risk strategies.

Johria, A., & Singh, R. K. (2024). "A Systematic Literature Review of Auditing Practices Research Landscape" Summary: This study conducts a bibliometric analysis to amalgamate the publication landscape in auditing practices, emphasizing the accuracy of financial statements in depicting company performance.

Yeboah, E. (2020). "Critical Literature Review on Internal Audit Effectiveness" Summary: This review highlights the relevance of internal audits in ensuring efficient resource utilization, controlling misappropriation, and combating fraud within companies.

Hofmann, C., Kuhn, S. B., van Raak, J., & Schwaiger, N. (2020). "Literature Review: Internal Control Quality and Audit Quality" Summary: The paper discusses the significance of internal control quality in the audit process, noting its documentation in various studies and its relevance to the Public Company Accounting Oversight Board (PCAOB).

El Gharbaoui, B. (2021). "Internal Audit Quality and Financial Performance: A Systematic Literature Review Pointing to New Research Opportunities" Summary: This review explores the relationship between internal audit quality and financial performance, highlighting the need for a universal model integrating both concepts.

Lenz, R. (2015). "A Synthesis of Empirical Internal Audit Effectiveness Literature Pointing to New Research Opportunities" Summary: The paper provides a synopsis of academic literature on internal audit effectiveness and proposes new research questions to enhance the field.

Al-Malakai, H. (2022). "The Influential Factors of Internal Audit Effectiveness: A Conceptual Model" Summary: This study systematically reviews literature to identify factors influencing internal audit effectiveness and articulates them in a conceptual model.

Pathak, J., & Lind, M. R. (2003). "Audit Risk, Complex Technology, and Auditing Processes" Summary: The article discusses how information systems generating electronic data have revolutionized audit methodologies, impacting audit risk and processes.

Demirkan, S., Demirkan, I., & McKee, A. (2020). "Blockchain Technology in the Future of Business Cyber Security and Accounting"Summary: This paper examines the role of blockchain in enhancing cybersecurity and its implications for accounting and auditing practices.

Boersma, M., Sourabh, S., Hoodooing, L. A., & Kandhai, D. (2023)."Network Characteristics of Financial Networks"Summary: The study analyzes companies as complex financial networks, suggesting that network centrality measures can enhance auditors' insights into financial structures.

Joshi, N. (2019). "Making Financial Auditing More Assured With Blockchain"Summary: The paper explores how blockchain technology can verify the authenticity of transactions in real-time, improving the accuracy and reliability of financial audits

III. OBJECTIVES OF THE STUDY

Primary objective

To assess the long-term impact of AI and data analytics on audit automation and efficiency

Secondary objectives

- To evaluate the sustainability of AI adoption in auditing
- To analyze the challenges and risks associated with long-term AI integration in audit practices.
- To explore the adaptability and scalability of AI-driven audit solutions
- To examine the impact of AI on the role and skill requirements of auditors in the long run
- To provide recommendations for sustainable AI-driven auditing practices.

IV. FINDINGS AND INFERENCES

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.510 ^a	8	.012
Likelihood Ratio	22.395	8	.004
Linear-by-Linear Association	13.173	1	.000
N of Valid Cases	100		

Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	1.864	.321		5.814	.000					
	qs8	.530	.137	.365	3.878	.000	.365	.365	.365	1.000	1.000

REGRESSION ANALYSIS

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.365 ^a	.133	.124	1.182	.133	15.041	1	98	.000

This analysis examined the predictive relationship between the variable qs8 and the outcome variable qs5 using a simple linear regression model. The goal was to determine whether qs8 serves as a significant predictor of qs5, and if so, how strong that relationship is.

Model Summary and Significance

The regression model was found to be statistically significant overall, as indicated by the analysis of variance (ANOVA): $F(1, 98) = 15.041, p < .001$. This suggests that the model provides a better fit to the data than a model without predictors, implying that qs8 adds meaningful explanatory power in predicting qs5.

The model yields an R-squared (R^2) value of 0.133. This means that approximately 13.3% of the variance in qs5 can be explained by variation in qs8. Although this is a relatively modest proportion of explained variance, it still indicates a meaningful relationship in behavioral or social science contexts, where small to moderate effects are common due to the complexity of human behavior.

Coefficients and Relationship

The unstandardized regression coefficient (B) for qs8 is 0.530, with a standardized coefficient (Beta) of 0.365. The positive direction of these coefficients suggests that as qs8 increases, qs5 also tends to increase. Specifically, for every one-unit increase in qs8, the model predicts a 0.530-unit increase in qs5, holding all else constant. The p-value for this coefficient is less than .001, indicating that this relationship is statistically significant. The standardized coefficient (Beta = 0.365) suggests a moderate positive effect size, allowing us to conclude that qs8 has a practical, not just statistical, significance in predicting qs5. In applied contexts, this type of relationship may point to a consistent trend or behavioral pattern worth investigating further.

Regression Equation

The regression equation derived from the model is:

$$Qs5 = 1.864 + 0.530 \times qs8$$

This equation can be used to predict values of qs5 from known values of qs8. The intercept (1.864) represents the predicted value of qs5 when qs8 is equal to zero. While the intercept itself may not always have a meaningful interpretation in isolation (depending on the scale and context of qs8), it is necessary for the calculation of predicted values.

Assumptions Check: Multicollinearity

Multicollinearity diagnostics indicate no concern, with a Variance Inflation Factor (VIF) of 1.000 for qs8. This confirms that qs8 is not linearly related to any other predictors in the model (since there are none in this simple regression), and thus, the estimates of the coefficients are reliable.

Conclusion

In summary, this regression model demonstrates a statistically and practically significant relationship between qs8 and qs5. Although the proportion of explained variance is moderate, the findings are robust and indicate a meaningful association. This suggests that qs8 is a useful predictor of qs5, and further research might explore the underlying reasons for this relationship or investigate additional variables to improve the predictive power of the model.

V. SUGGESTION

- Based on the findings, it is recommended that organizations, particularly in sectors lagging behind in AI adoption, prioritize strategic initiatives to boost awareness and capability-building around AI in auditing.
- Given the experienced and predominantly female workforce, targeted training programs should be designed to address the identified challenges—especially resistance to change and lack of expertise.
- As the technology sector leads in planned adoption and the banking sector in actual The significant statistical relationship between industry type and technology adoption suggests that tailored approaches per sector may be more effective than a one-size-fits-all strategy
- Moreover, since AI is perceived as a tool to complement rather than replace human auditors, integrating AI into existing workflows with clear communication on its role can help mitigate resistance.
- Lastly, the regression results highlight the importance of qs8 (likely a measure of AI readiness or familiarity) in predicting outcomes related to AI integration (qs5), suggesting that enhancing this factor can significantly influence successful adoption.
- implementation, cross-sector knowledge sharing and benchmarking could be highly beneficial.

VI. CONCLUSION

The study comprehensively examined the evolving role of Artificial Intelligence (AI) and automation in the auditing domain, highlighting both the opportunities and challenges it brings. The findings suggest that AI significantly enhances audit efficiency, accuracy, and fraud detection, particularly in large and technologically advanced organizations. However, the transition is not without challenges—resistance to change, lack of technical expertise, and ethical concerns remain key barriers to widespread adoption. While a substantial portion of respondents believe that AI will lead to complete automation or significant transformation in auditing over the next five years, the consensus leans toward AI complementing rather than replacing human auditors. Moreover, technologies like blockchain, predictive analytics, and machine learning are expected to play critical roles in shaping the future of audits. The study concludes that while AI integration in auditing is promising and transformative, its long-term sustainability will depend on continuous human oversight, ethical practices, regulatory support, and robust data infrastructure.

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